

4. — *The South African Nemestrinidae (Diptera) as represented in the South African Museum.* — By M. BEZZI.

Through the kindness of Dr. L. Péringuey, Director of the S. African Museum I have been able to study an interesting Collection of South African Nemestrinids on which this paper is based.

The Nemestrinidae form a small family of Diptera, easily distinguished by their very peculiar venation, the most striking feature of which is the so-called "diagonal vein".

There are about 160 species described from the whole World, and distributed among about 20 well established genera, mostly restricted to various zoological Regions. Only *Hermoneura*, *Rhynchocephalus* and *Atriadops* are seemingly represented in several regions of the Old and of the New World. To these living species must be added 6 fossil ones, 3 belonging to *Hermoncura*, while the other 3 are ascribed to peculiar extinct genera; of these last, only one, *Prohirmoneura* Handlirsch (1906), has been found in Europe, while the other, *Palembolus* Scudder (1878), and *Hirmoneurites* Cockerell (1910) are both from Florissant, Colorado, U. S. America.

Very little is known of the metamorphosis and the bionomics of these flies. No doubt they are parasitic upon other insects of various orders, as proved in the case of the European species *Hermoneura obscura* which attacks in an extraordinary manner the *Scarabaeid* beetle, *Rhizotrogus solstitialis*, and of the South American *Hermoneura exotica* which is said to lay its eggs in the nests of Bees of the gen. *Xylocopa*.

The adults are flower haunting flies, at least those with well developed mouth parts; and some of them are very like in their habits the *Bombyliidae* with which they may be confounded on superficial examination. The long or very long proboscis of some species is a proof of their adaptation for visiting some flowers with long, tubular perianth. Thus Westermann \*) has, as far back as 1821, described \*)

\* Ueber die Lebensweise der Insecten in Ostindien und am Cap. *German. Mag. Entom.*, IV, 1821, p. 411—427. Quoted also by Macquart (1840, pl. 13) and by Lichtwardt. (1910, p. 613).

the behaviour of *Megistorrhynchus longirostris* at the Cape, towards the flowers of a *Gladiolus*.

Professor Arias in his Monograph of the Spanish species (1913, p. 9-10) has given some details on the behaviour of *Nemestrinus aniassi*, which visits the flower-heads of the Composite plant *Onopordon acanthium* L., and on that of *Rhynchocephalus tauscheri* hovering near the flowers of the labiate plant *Marrubiana vulgare*, L. I have observed myself in 1895 in Calabria, South Italy, *Tallenia fasciata* on flower-heads of a species of *Carduus*; it was very common in June, and when sitting on the flowers, it was easily captured even by the hand; it very much resembles Bees of the gen. *Podalirius*. Other species seem likewise to mimic Aculeate *Hymenoptera* of the family *Apidae*, or related forms. The habits of the species with atrophied mouth parts are not known; and the same must be said of the widely spread Genus *Hermoneura*.

Most of the species are very rare; but this is probably due to the ignorance of their mode of life; thus *Hermoneura obscura*, an insect which is very rare in Europe (in more than 30 years I have never captured one), was once found by Prof. Handlirsch to be abundant in its natural habitat

The geographical distribution of the family is very interesting as was long ago pointed out by Osten-Sacken. Its members are denizens of warm, dry, almost rainless climates. South Africa is one of the regions in which they have found their home. It is curious to note that, while numerous species are known from Northern as well as from Southern Africa, almost none have been found to occur in the central parts of the Continent.

The South African forms are peculiar to the Region, and of 6 genera represented there, 4 are endemic including the very abundant genus *Prosoeca*. But the South African fauna is perhaps not well known as yet in this respect.

Wiedemann, (1818-1830) enumerates only 5 species, and Macquart (1840-1846) only 4. Loew, in 1860, catalogued and partly described as new 11 species. Schiner, in 1868, recorded 20 species, from the whole of Africa, but only the same number from the South; the main merit of this record is the important progress made in the inclusion of the South African species of *Nemestrinus* having no reticulate wings into a special genus *Prosoeca*.

The Catalogues of Bezzi (1906) and of Kertész (1909) both include 13 species; but a serious fault of both these Catalogues is that of not having recognised in its true sense the value of the Schinerian genus *Prosoeca*.

Finally, in 1910 Lichtwardt in his Monograph enumerates 23 species, + 2 not named, + one recorded by Miss Ricardo, but not determined, + the overlooked *macularis*, Wiedemann, and in 1920 he added five species to the S. African fauna.

The absence of the gen. *Hermoneura*, which is recorded from all parts of the World is very noteworthy. Very characteristic also is the absence of the gen. *Nemestrinus*, which is plentiful in North Africa and in the Mediterranean region.

For the recent literature on the family, the following works and papers may be consulted with profit.

1. SHARP, D. Insects. Part II, in "Cambridge Natural History". London, 1899.
2. HANDLIRSCH, A. Die fossilen Insekten und die Phylogenie der resenten Formen. Leipzig 1906—1908 V, p. 633 and 1300.
3. BEZZI, M. Ditteri eritrei raccolti dal dott. Andreini e dal prof. Tellini. 1. Bull. Soc. ent. ital., XXXVII (1905), 1906, p. 243—244.
4. WILLISTON, S. W. Manual of North American Diptera. Third Edition. Illustrated. New Haven and London, 1908. V. p. 186—187.
5. COCKERELL, T. D. A. The Dipterous family *Nemestrinidae*. Trans. Am. ent. Soc., XXXIV, 1906, p. 247—254.
- 5a. — — Fossil Insects and a Crustacean from Florissant, Colorado. Bull. Am. Mus. N. H., XXVIII, 1910, p. 283—286.
6. KERTESZ, C. Catalogus Dipterorum hucusque descriptorum. Vol. IV. Budapestini 1909. p. 22—32.
7. VERRALL, G. H. British Flies. Vol. V. London 1909. p. 440—446.
8. LICHTWARDT, B. Beitrag zur Kenntniss der Nemestriniden. (Dipt.) Deutsch. entom. Zeitschr., 1909, p. 113—127, 507—514, 643—651; 1910, p. 571—588, 589—624.
- 8a. — — Die Dipterengattung Nycterimyia. Entom. Mitteil., 1, 1912, p. 26—28.
- 8b. — — Die Nemestriniden des Ungarischen National-Museum im Budapest. Ann. Mus. Nat. Hung. XVII, 1919, p. 274—278.
- 8c. — — Ueber Afrikanische Nemestrinen. Entom. Mitteil. IX, 1920, p. 97—101.
9. ARIAS, J. Notos dipterologicas. 1. Bol. R. Soc. españ. H. N., 1911, p. 561—568.
- 9a. — — Dipteras de España. Fam. Nemestrinidae. Trab. Mus. nac. de Cienc. Nat., Madrid 1913.



FAM. NEMESTRINIDAE.

*Key to the Genera.*

The *Nemestrinid* genera of the South African fauna are distinguished as follows:

- (6) 1. Proboscis and palpi not distinct; third antennal joint very short and with a simple style; wings with the ambient vein absent, with the auxilliary vein closely approximate to the first longitudinal vein, and with only 3 or 4 longitudinal veins present at apex below the first.
- (3) 2. No ocelli, at the apex of the wing; below the first vein, there are 4 other longitudinal veins (the 2nd, the 3rd and the two-branched 4th) all separated to the end and thus forming 5 posterior cells; 6th longitudinal vein two-branched, the lower branch dividing the exillary cell into two cells . . . . . *Atriadops*, Wand.
- (2) 3. Ocelli present; at the apex of the wing are 3 longitudinal veins only (the 2nd, the 3rd, and the simple 4th) below the first, thus forming only 3 or 4 posterior cells; 6th longitudinal vein simple, the axillary cell not being divided.
- (5) 4. Diagonal vein extended to the hind border of the wing; 4 posterior cells present; 2nd longitudinal vein united by a cross vein to the first, but wholly separated from the third; discoidal cell very narrow; anal cell open; hind border of the wings sinuous . . . . . *Nycterimyia*, Lichtw.
- (4) 5. Diagonal vein not extended to the hind border; 3 posterior cells only; second longitudinal vein not united by a cross vein with the first, but united with the 3rd before reaching the costa; discoidal cell broad; anal cell closed; hind border of the wings entire . . . . . *Symmictus*, Loew.
- (1) 6. Proboscis and palpi well developed, the former often long or very long; antennal style triarticulate and sharply separated at base from the rather elongate third antennal joint; wings with the ambient vein complete, with the auxiliary vein distant from the first and diverging from it at end, and with 5 longitudinal veins (the 2nd, the two-branched 3rd, and the two-branched 4th) present at apex below the first and thus always with 5 posterior developed cells; diagonal vein always extended to the hind border of the wing.
- (8) 7. No distinct alula; 6th longitudinal vein straight; 4th posterior cell provided with a long stalk at the base; wings of the male of a peculiar shape; eyes in the same sex closely approximate in front of the ocelli; ovipositor long. . . . . *Stenobasipteron*, Lichtw.
- (7) 8. Alula well developed; 6th longitudinal vein undulate; 4th posterior cell sessile at base; wings of male not specially shaped and eyes not so much approximate; ovipositor short.
- (10) 9. 6th longitudinal vein simple; apex of wings not reticulate; second longitudinal vein usually not united with the 3rd by a cross vein  

*Prosoeca*, Schin.



- (9) 10. 6th longitudinal vein forked, its lower branch dividing the axillary cell into 2 cells, apex of wings reticulate; 2nd longitudinal vein united by a cross vein to the upper branch of the third vein as in the gen. *Nemestrinus* . . . . . *Megistorrhynchus*, Macq.

# I. ATRIADOPS, Wandolleck, 1897.

Colax, Wiedemann.

Of this very interesting genus there is at present but a single african species known, recorded from various localities of the Ethiopian Region, from Abyssinia to the Cape and from the East to the West Coast.

ATRIADOPS VESPERTILIO, Loew 1858 (*africana*, Wandolleck 1897).

A very strange fly with inflated body and with a proportionally small head, distinguished by the chocolate colour of the abdomen, and by the fuscous, white and black spotted wings.

A single male specimen from Stella Bush, Durban, Natal, January 1915; Mfongosi, Zululand, May 1917; East London. Cape.

# II. NYCTERIMYIA, Lichtwardt, 1909.

This genus has a very peculiar venation, having 2 marginal and 2 submarginal cells; the 3rd longitudinal vein is forked, but there are 3 veins only at apex below the first one, because the upper branch of the cubital fork ends in the second longitudinal vein, being shaped as a cross vein, which divides the submarginal cell into 2. The basal one of these 2 cells is much broader than the very small discoidal cell; the 2 marginal cells are formed by the cross vein uniting the 2nd with the first longitudinal vein, and the apical one is half as long as the basal one. There are only 4 posterior cells, disposed on 2 lines.

The new species here recorded is a very important addition to the Ethiopian fauna, all the other species of the genus being known only from the Oriental said Australasian Regions. This new african species is not very different from the typical ones, the shape of the wings and the wing-pattern being very like those of *N. dohrni*, Wandolleck, (from Sumatra, Mafar and the Andaman Islands) and of *N. harni*, Lichtwardt (from Kuranda, N. Queensland).

NYCTERIMYIA CAPENSIS, sp. nov.

An elegant species, at once distinguished by the striking shape and pattern of the wings.

Type ♂, Stella Bush, Durban, Natal, January 1915. (H. W. Bell-Marley), already named as above by Dr. Villeneuve.

♂. Length of body 9 mm.; of a wing 11 mm.; of wing spread 26 mm.

Head flat, a little concave behind, about as broad as the thorax; it is reddish-brown, only the great ocellar tubercle being blackish. Eyes bare, very approximate in front of the ocelli, with the upper areolets much larger than the lower ones, which occupy only the inferior third of the eye and are sharply separated from the others. Frons elongate-triangular, gradually broadening forwards, entirely reddish-brown and clothed with reddish hairs; ocellar tubercle with darker hairs, while those of the occipital border are reddish. Face very deeply excavated in the middle with a rounded convexity of reddish colour, clothed with rather scarce and not very long, reddish hairs. Antennae very short, with the third joint rounded and smaller than the preceding one; they are pale yellowish like the rather thick style, which is twice as long as the antenna. Thorax short and broad, distinctly broader than long; it is opaque, reddish-brown, grey-dusted, with a brown longitudinal patch on each side from the humeri to beyond the middle, and in addition with a brown spot on the postalar calli; it is clothed with rather long, soft, reddish hairs which are denser on the pleurae and scarcer in front of the scutellum; above the root of the wings there are some dark coloured and bristle-like hairs. Scutellum swollen, rounded, dark reddish brown, clothed with long, erect, reddish hairs. Squamae rudimentary; halteres whitish, with a dark reddish tuft of hairs before them. Abdomen as broad, but twice as long as the thorax; it is reddish brown, opaque, but each segment has 2 rather shining, greyish, rounded spots in the middle, one on each side; the reddish hairs are more scattered and shorter than those of the thorax; venter reddish-grey, scarcely pilose; genitalia prominent, reddish brown, with a shining lower terminal lamella. Legs very short and entirely of a pale yellowish colour; front femora thicker than the others, and more densely pilose, their hairs being moreover darker than those on the remainder of the legs. Wings narrow and long, cuneate at base, the alulae being very narrow, almost linear; they have the fore border quite straight, while at the hind border there are 3 distinct, rounded projections; one just below the tip, which is therefore curved downwards, one at the end of the diagonal vein, and one at the end of the anal cell. The costa is bare, and ends at the tip of the 3rd longitudinal vein; the disposition of the veins is the same as in Wandolleek's fig. 8. The whole wing

is of an opaque reddish-brown colour, which becomes less intense towards the hind border; the fine, sharply defined, whitish-hyaline spots are shining with pearly sheen; the disposition of these spots is more like that of *dohrni* (Wandolleek's fig. 7), than that of *harni* (Lichtwardt's fig. 1). They are as follows: (1) a spot near the base of the axillary lobe, with the upper border rounded and the outer border concave, as in *horni*; but while in *horni* it is the upper corner of the spot which is more prolonged, in *capensis* we have the opposite case, the lower corner being the more prolonged one; (2) an ovate spot into the middle of the second basal cell, less developed than in *dohrni*, but much more developed than in *horni*; (3) a broad, double spot, which fill up broadly the middle of the first submarginal cell and is continued above and in front by a smaller spot, near the end of the first marginal cell; the shape of this spot is about the same as in *dohrni* and in *horni*, but the spot in *capensis* is less transverse; (4) a broad, perpendicular streak near the base of the 3rd and 4th posterior cells, extended about to the hind border of the wing; this spot is eminently characteristic of the present species, being in *dohrni* and in *horni* indicated only by the small rounded spot near the base of the 3rd posterior cell; (5) a transverse streak near the tip of the first posterior cell in contact with the 3rd longitudinal vein; this is the second or apical one of the two corresponding streaks of *dohrni* and of *horni*, the first or basal one being quite wanting or only indicated by a small subhyaline dot which is surrounded by darker parts.

### III. SYMMICTUS, Loew, 1858.

According to Lichtwardt and in opposition to Arias, I assume here the present genus to be distinct from the Mediterranean *Dicrotrypana*, Bigot.

#### SYMMICTUS COSTATUS, Loew, 1858.

A very distinct species on account of its peculiar venation.  
Originally described from Caffraria, but never found subsequently.

### IV. STENOBASIPTERON, Lichtwardt, 1910.

This peculiar South African genus is very distinct in the male sex; but the long and cuneate wings, which are destitute of alulae, and



chiefly the stalked 4th posterior cell will help very well to recognise even the female.

The known species may be distinguished as follows.

- (4) 1. Wings much longer than the body, with the axillary vein hardly distinguishable not chitinised, straight; antennae entirely yellowish; frons of the female much narrower than one eye.
- (3) 2. Proboscis longer than the body; first basal cell with a "bulla" near the base of the 2nd longitudinal vein; large size (17 mm.) *wiedemanni*, Lichtw.
- (2) 3. Proboscis shorter than the body; no such "bulla" at base of the 2nd vein; middle size (13 mm.) . . . . . *gracile*, Lichtw.
- (1) 4. Wings only a little longer than the body, with a short but chitinised axillary vein which is moreover bent at an angle in the middle; 3rd antennal joint black; frons of the female only a little narrower than one eye; proboscis shorter than the body; no "bulla" at base of the 2nd vein; small size (7 mm.) . . . . . *minimum*, sp. nov.

STENOBASIPTERON WIEDEMANNI, Lichtwardt, 1910.

Originally described from the Cape, and from Natal. Seymour, Cape, November 1885 (W. C. Scully); M'fongosi, Zululand, March 1917 (W. E. Jones); Port Alfred, Cape.

STENOBASIPTERON GRACILE, Lichtwardt, 1910.

Originally described from Mashonaland, S. Rhodesia, and not captured subsequently.

STENOBASIPTERON MINIMUM, sp. nov.

A small species, being even the smallest South African Nemestrinid at present known; easily distinguished on account of the peculiar axillary vein, of the short proboscis and of the black third antennal joint.

Type ♀, a single specimen from Cape Town, Table Mountain, February 1919 (R. W. E. Tucker).

♀. Length of the body 7 mm.; of the proboscis 4.5 mm.; of a wing 7.5 mm.

Head entirely blackish-brown, only the middle of the face being narrowly reddish. The frons is much broader and much shorter than in the two preceding species; it is parallel-sided and only a little longer than broad, being only a little narrower than one eye; it is divided in the middle by a transverse furrow, which is bare, while the ocellar half is clothed with erect, dense and long hairs of a red-

dish colour with a dark end, and the supra-antennal half is clothed with shorter and more yellowish hairs. The ocelli are very small and much apart from each other, disposed on an equilateral triangle, the anterior one being of a not larger size. Face more shining than the frons, clothed with yellowish hairs, like those of the beard. Antennae with the two basal joints red, clothed with yellowish hairs; first joint about twice as long as the second; third joint of a deep black colour, regularly conical, about as long as the two first joints together; arista of a deep black colour, as long as the whole antenna, with the basal joints well developed. Palpi reddish, narrowly black at end; proboscis intensely black, a little longer than the half of the body. Thorax and scutellum blackish-brown, grey-dusted, rather opaque; the back has two less distinct, dark reddish, longitudinal stripes; they are clothed with erect, rather dense, reddish yellow hairs; pleurae more densely grey-dusted, with more yellowish hairs, chiefly those of the meso-pleural tuft. Squamulae and halteres pale yellowish. Abdomen reddish brown towards the sides and the hind border of the segments, brownish on the middle, with a shining black longitudinal stripe which is however less marked; it is clothed with rather short yellow hairs, which on the sides are of a golden colour; venter reddish-yellow; ovipositor blackish brown, with black terminal lamellae. Legs entirely reddish, rather shining, with scarce, pale yellowish hairs. Wings about as long as the body and thus much shorter than those of the two preceding species; they are therefore less distinctly stalked at base, the alulae being however exceedingly narrow; they are uniformly and faintly infuscated, being yellowish along the fore border from the base to the end of the costal cell. The veins are reddish basally, and infuscated apically. The venation is normal for the genus; the basal stalk of the 4th posterior cell is as long as the apical cross vein of the 2nd basal cell; the axillary vein is very short but strong, bent at an angle in the middle and directed towards the hind border of the wing.

#### V. PROSOECA, Schin. 1867.

This is the most characteristic genus of the fauna, being essentially South African and comprising 75% of all the known Nemestrinids of the Region. The species are in some cases very difficult to distinguish: but there are among them some very peculiar and very distinct forms as shown in the Key.

*Key to Species.*

1. (2) Upper branch of the cubital fork united by a cross vein with the second longitudinal vein; all the longitudinal veins upturned at end; proboscis more than twice as long as the body; wings with a conspicuous pattern  
*péringueyi*, Lichtw.
2. (1) Upper branch of the cubital fork not united with the second vein.
3. (14) Proboscis slender and longer than the body, usually twice as long and even longer; all the longitudinal veins at apex of wing with upturned ends.
4. (7) Wings with the median part of the cells infuscated, the veins appearing thus somewhat edged with yellowish borders.
5. (6) Abdomen uniformly black, with the hind borders of the segments clothed with yellow hairs . . . . . *longirostris*, Macq.
6. (5) Abdomen greyish with a peculiar brown pattern . *ganglbaueri*, Lichtw.
7. (4) Wing-veins not bordered with yellowish.
8. (9) A mostly reddish species, with slightly infuscated wings, which have a reddish costal stripe; back of thorax with three black longitudinal stripes  
*rubicunda*, n. sp.
9. (8) A mostly blackish or dark grey species; thorax not so striped.
10. (11) Abdomen black, rather shining, with the hind borders of the segments reddish-brown and whitish-tomentose; species of smaller size  
*nitidula*, n. sp.
11. (10) Abdomen greyish, opaque, with the hind half of the middle segments deeper black; species of larger size.
12. (13) Wings infuscated along the fore border; abdomen with a distinct pattern; femora entirely reddish; proboscis twice as long as the body  
*longipennis*, Loew.
13. (12) Wings not infuscated at fore border; abdomen without distinct pattern; femora blackish; proboscis less elongated . . . . . *robusta*, n. sp.
14. (3) Proboscis thicker, sometimes very robust, and shorter than the body, or at most as long.
15. (54) The two terminal branches of the fourth vein are not united together with cross veins; the tuft at the root of the wings is typically white.
16. (41) All the longitudinal veins at apex of wing are turned up at end.
17. (26) Robust species of greater size; proboscis only a little shorter than the body, or as long, only in one case not longer than the pectus.
18. (25) Proboscis longer than the pectus, usually about as long as the body.
19. (24) Hind legs usually entirely red, with not specially thickened and not intensively black tibiae.
20. (21) Wings greyish hyaline, with a faint yellowish tint at base and along the fore border; femora broadly black; scutellum black . . . *major*, n. sp.
21. (20) Wings brownish or yellowish, with a distinct coloration; femora entirely red; scutellum reddish.
22. (23) Abdomen reddish brown, with a row of rounded black spots along the middle . . . . . *willowmorensis*, Lichtw.
23. (22) Abdomen black, concolorous, not spotted . . . *flavipennis*, Lichtw.
24. (19) Hind legs entirely of a deep black colour, with the tibiae distinctly thickened, chiefly in the male, owing to the dense and short black ciliation



- a (b)* Proboscis rather slender and longer than the thorax: *lata*, Lichtw.  
*b (a)* Proboscis thick, as long as the thorax or nearly so:  
*c (d)* Hairs of the underside of head and thorax white *beckeri*, Lichtw.  
*d (c)* Hairs of the underside of head and thorax a of right fulvous colour  
*ignita*, n. sp.
26. (17) Less robust species and of smaller size; proboscis much shorter than the body.  
 27. (34) Abdomen quite opaque.  
 28. (29) Wings with infuscated fore border and with a hyaline spot into the sub-marginal cell, the veins being partly margined with fuscous; frons hairy, with silvery pubescence below the hairs; abdomen with four dark spots on each segment . . . . . *macularis*, Wied.  
 29. (28) Wings not so variegated at fore border and with the veins not edged with fuscous; frons rather bare, or at any rate devoid of silvery pubescence; thorax with black pubescence on the back; abdomen not spotted.  
 30. (33) Wings distinctly darkened at fore border and with black veins.  
 31. A darker species; abdomen mostly black-haired (*zuluensis*) *caffraria*, Lichtw.  
 33. (30) Wings not darkened at fore border and with yellowish veins  
*umbrosa*, Lichtw.  
 34. (27) Abdomen shining; frons always pilose; wings more or less variegated at fore border.  
 35. (36) Legs and antennae entirely black . . . . . *handlirschi*, Lichtw.  
 36. (35) Legs reddish brown.  
 37. (40) Frons with silvery or white hairs in front; antennae with third joint black.  
 38. (39) Abdomen broadly shining, as in the preceding species and with a similar pattern . . . . . *lichtwardti*, n. sp.  
 39. (38) Abdomen less shining and destitute of grey transverse bands  
*westermanni*, Wied.  
 40. (37) Frons with no silvery hairs; antennae entirely reddish  
*circumdata*, Lichtw.
41. (16) Apical veins all or in part quite straight at end.  
 42. (49) Second longitudinal vein, and one or both branches of the cubital fork curved up at end.  
 43. (46) Both branches of the cubital fork curved up at end; thorax and abdomen with a conspicuous pattern.  
 44. (45) Antennae with the third joint infuscated . . . . . *variegata*, Loew.  
 45. (44) Antennae quite yellow . . . . . *quinque*, Lichtw.  
 46. (43) Only the upper branch of the cubital fork curved up at end.  
 47. (48) Thorax and abdomen with a distinct pattern, like that of the two preceding species . . . . . *ornata*, Lichtw.  
 48. (47) Thorax and abdomen uniformly black . . . . . *atra*, Macq.  
 49. (42) All the longitudinal veins straight at end.  
 50. (53) Abdomen without transverse band of yellowish hairs at base; wings darkened at fore border, but without fuscous spots at end of second basal cell and at base of cubital fork.  
 51. (52) Abdomen clothed with short hairs of pale colour . . . . . *variabilis*, Loew.  
 52. (51) Abdomen clothed with longer hairs of darker colour . . . . . *fusca*, Loew.

53. (50) Abdomen with distinct basal transverse band of yellowish hairs; wings with fuscous spots at end of the second basal cell and at base of the second sub-marginal cell . . . . . *accinota*, Wied.
54. (15) The two branches of media are united towards the middle with two cross veins, which forms a small cell; the tuft at the root of the wing is black . . . . . *connexa*, n. sp.

PROSOECA PÉRINGUEYI, Lichtw. 1920.

A characteristic species of great size, and with a very long proboscis; at once distinguished from all the other here recorded on account of the cross vein uniting the upper branch of the cubital fork with the second longitudinal vein, as in the gen. *Nemestrinus*.

Type ♀, from Namaqualand, Klipfontein, Cape Colony, August 1890. R. M. Lightfoot. The connection between the 2nd and the 3rd longitudinal vein in the present species, is in opposition to the main distinguishing character of the two genera *Nemestrinus* and *Prosoeca*; but the present species is undoubtedly to be referred to the latter genus, owing to its general appearance, etc.; the cross vein is besides very short and perpendicular (much shorter than the basal part of the upper branch of the cubital fork), not long and oblique as in *Nemestrinus*, in which it is always longer than the basal segment of the upper branch of the cubital fork.

♀. Length of body 16 mm.; of a wing 20 mm.; of the proboscis 34 mm.; of the wing spread 46 mm.

Wholly of a dark reddish-brown colour, but blackish on the back of the mesonotum, and with a dense grey dust on the abdomen. Frons with parallel sides, but a little broadening forwardly; it is less than half of the width of one eye, and is distinctly longer than broad; it has on the fore half a broad, prominent, rounded tubercle, which is blackish in colour while the rest of the frons is reddish; the frons is thus deeply depressed between this tubercle and the large ocellar one; the long and erect hairs of the ocellar tubercle are dark, like the short ones of the occipital border; the short and scarce hairs of the frons are whitish. Antennae with the two basal joints of the same length and reddish, the second with long black hairs which are more numerous beneath; third joint regularly conical, as long as the first two joints together, blackish in colour; style three-jointed, blackish, once and a half as long as the whole antenna. Face very convex along the middle line, separated from the frons by a furrow which extends between the antennae; it is about as long as the frons, reddish, with the upper part blackish; it is clothed with short white hairs, which are denser on the sides, turning to a

fine white beard; the hairs of the lower part of the occiput are white, but there is a complete crown of black ciliae along the border even underneath. Palpi black, obtuse and black-haired at end; proboscis thin and very long, acute at end, black, with reddish base beneath. Back of mesonotum grey-dusted, adorned with two rather narrow but sharply defined deep black stripes which are slightly converging backwards and end acutely at the transverse suture; beyond the suture there is a less defined and short, broader brown stripe in continuation; the sides, humeri and postalar calli are reddish, and inward of the red sides there is a less defined dark stripe on each side. Pleurae reddish, grey-dusted and black-spotted below. The erect hairs of the back are black, but below them there is a shorter whitish pubescence; on the sides and on the pleurae the whitish hairs prevail, with some scattered and longer black ones intermingled; along the notopleural line, there is a dense fringe of whitish hairs. Scutellum reddish, with black erect hairs; its hind border is black, and bears longer and more rigid black hairs; the hairs of the underside are whitish. Squamulae brown, with dense, long, soft, white fringe, like the metapleural tuft; halteres with reddish stalk and with a dark knob. Abdomen with a middle row of three well defined, oblong, blackish-brown spots; each segment bears moreover on each side an irregular reticulate dark pattern; the venter is paler and unspotted; the scattered, erect hairs are black like the short pubescence of the back; on the sides and the venter the white hairs are prevalent. The three basal segments of the tail bear also the blackish middle spot; the terminal lamellae are black and black-haired. Legs reddish brown, with darker tibiae and tarsi, those of the hind pair being even black and rather thickened; the long hairs of the femora and tibiae are black, while the soft hairs below the femora are white; the dense and short pubescence of the tibiae and tarsi is black; breast and coxae with dense white hairs; claws red, with black tip; pulvilli yellowish. Wings narrow and long, with narrow but well developed alulae; the extreme base of the wing is blackish brown, the white basal tuft being therefore very conspicuous; the veins are reddish-brown, blackened towards the end; the second longitudinal vein and the upper branch of the cubital fork are strongly curved up at end and are parallel, while the end of the other veins are less upturned, even if distinctly so; first posterior cell considerably narrowed at end; fourth posterior cell with a sessile but punctiform base. The right wing of the type is anomalous, showing a second cross vein uniting the upper branch of the cubital fork with the second longitudinal vein, and having



moreover a supernumerary cell of oval shape before the middle of the upper branch of the cubital fork. The brown pattern is very marked, consisting in a broad fore border extending about to the middle of the wing, the end of the first submarginal cell being however hyaline and fenestra-like: there is moreover a broad, isolated, brown spot below the discoidal cell filling up the apex of the second basal and the base of the fourth and of the fifth posterior cells; and another spot before the end of the diagonal vein, filling up the base of the second and the apex of the fourth posterior cell, extending a little above and below them. The alula has the hind border hyaline near the end; the discoidal cell is almost entirely hyaline, while the first basal cell is quite infuscated to the end; the second basal cell is broadly hyaline at end; the second submarginal cell is entirely infuscated, while the third is almost entirely hyaline in the middle; the first posterior cell, and the second, more narrowly, are infuscated at end forming the apical limit of the fuscous fore border of the wing.

*PROSOECA RUBICUNDA*, sp. nov.

A proportionally small species, very distinct on account of its prevalent reddish colour, of its black striped thorax and of the narrow fringe of white hairs at the hind border of the middle abdominal segments.

Type ♀, a single specimen from Oudebosch, Caledon Div., Cape Colony, 1500 ft., January 1919 (K. H. Barnard).

♀. Length of body 14 mm., of the ovipositor 5 mm.; of the proboscis 22 mm.; of a wing 15 mm.

Occiput black, densely grey-dusted, clothed with dense and soft whitish hairs; on the upper side it has a reddish-yellow triangle correspondingly to the broad ocellar tubercle which is rounded, entirely reddish and clothed with long and dense reddish hairs. Frons broad, reddish, with whitish dust and with whitish hairs; the impressed line between the antennae is darker; the face is in the middle more reddish than the frons, with a less developed dust and with whitish hairs on the sides. Basal joints of the antennae reddish-yellow, the first joint a little longer than the second, which bears long reddish hairs; third joint wanting in the type. Proboscis much longer than the body, reddish above and black below, with entirely black end; palpi reddish-yellow. Beard long and dense, of a pure white colour. Back of thorax reddish-yellow, with three broad, black, longitudinal stripes, the median attenuated behind, ending in a point near the base of the scutellum; it is clothed with dense and long, dark reddish

hairs, which are paler near the sides. The pleurae are reddish on the upper half, blackish on the lower one, with dense tufts of pale yellowish hairs, and with paler ones on the pectus. Scutellum reddish, with a small, triangular, blackish spot in the middle at the base; it is clothed with long, pale yellowish hairs. Squamulae brownish, with a white fringe; halteres yellowish. Abdomen reddish; first segment black; second segment with a black middle stripe and with a dark hind border: third and fourth segments with dark hind border but without middle stripe; the base of the second and of the third segment is moreover narrowly black; the short hairs are yellowish but at the hind border of the second and of the third segment there are dense white hairs which form two narrow white stripes interrupted in the middle: the last segment is likewise fringed with dense white hairs on the sides. Ovipositor reddish at the base with a black median stripe, black at end. Venter entirely reddish-yellow, with short pale hairs. Legs quite red, with pale hairs; but only one of the hind pair is present, in the type. Wings with a faint but equal infuscation; along the costal cells there is a reddish stripe between the red costa and the red first longitudinal vein; the other veins are black, only the diagonal and the fifth being red. Venation normal: all the longitudinal veins are upturned at end. Extreme base of wing blackish-brown, with a white tuft.

*PROSOECA LONGIROSTRIS*, Macquart, 1846.

Described from the Cape as a *Hermoneura*, but not found subsequently.

*PROSOECA GANGLBAUERI*, Lichtwardt, 1910.

A species with a very long proboscis, easily distinguishable on account of its peculiar, but not strikingly marked, wing pattern. Originally described from a female from Algoa Bay, Cape Colony, type at Vienna. Grahamstown Cape (Bowker). Cookfontein, Cape (S. Viljoen). Transvaal, Shilouvane (Junod). The measurements of this species are as follows: length of body 14 mm.; of a wing 17 mm.; of the proboscis 28 mm.; of the wing spread 41 mm.; the proboscis is distinctly longer than in the type.

*PROSOECA NITIDULA*, sp. nov.

A species with a long proboscis, distinguished by the black, moderately shining abdomen, and the infuscated anterior half of the wings.

Type ♀, a single specimen from Cape Town, January 1913 (R. M. LIGHTFOOT).

♀. Length of body 14 mm.; of a wing 17 mm.; of the proboscis 22 mm.; of the wing spread 40 mm.

Frons reddish, but densely grey-dusted, gradually broadening forwardly, being twice as broad as at vertex above the root of the antennae; it is completely convex in the middle, being separated from the ocellar tubercle by a less deep furrow; it is clothed near the vertex with whitish, and on the ocellar tubercle with blackish hairs like those of the middle of the basal part, while those of the sides of the front part are white. Face considerably shorter than the frons, regularly convex, separated from the frons by a blackish transverse stripe, placed into the furrow between the antennae; it is red, shining and almost bare in the middle, with dense white hairs on the sides. Antennae with the first joint elongate, reddish-yellow, white-haired; second joint only one half as long as the first of a darker reddish colour, with the ciliae black above and white below; third joint conical, shorter than the first two together and quite black like the tri-articulate style which is only a little longer than the whole antenna; the two basal joints of the style are long and equal being together about as long as the terminal joint. Palpi upturned, acute, reddish-yellow, pale-haired, with black ciliae at end; proboscis black, with the basal part red above. Occipital border destitute of black ciliae; beard dense, soft, white. Thorax blackish, opaque, dark grey-dusted on the back and light grey-dusted on the pleurae; on the back, when denuded, are traces of three longitudinal deep black stripes, the two lateral ones being more distinct; the hairs are pale yellowish on the back, with longer and erect black ones intermingled, and are whitish on the pleurae. Scutellum reddish brown, with black erect hairs and with whitish ones below; halteres and squamulae hidden between the long pleural tufts. Abdomen as long as the thorax and a little broader in the middle; it is black, rather shining on the middle of the segments, reddish-brown on the sides; each segment has at the hind border a broad, reddish and pale-dusted band; the hairs are black on the black parts, whitish at the base and at the hind border of the segments; venter reddish, grey-dusted and white-haired; tail blackish, with the terminal lamellae black and black-haired. Legs entirely reddish-yellow and almost bare; the soft hairs of the femora are white, while the dense short pubescence of the tibiae and tarsi is reddish; claws red, with black tip; pulvilli dirty brown. Wings narrow and long; extreme base black, with white tuft; fore border infuscated to the second longitudinal vein and to the upper branch of the cubital fork, the long first basal cell being entirely infuscated in



the shape of a projecting tooth directed forwards; the discoidal and the second basal cell are hyaline, like the well developed alulae and the hind part of the wing. The veins are red, the auxiliary and first longitudinal costa, completely, the others broadly blackened at end like the black ambient vein. All the longitudinal veins are turned up at end, at the apex, the second and the third more strongly than the others: first posterior cell not narrowed at end; base of the fourth posterior cell punctiform but sessile; anal cell very narrowed at end.

PROSOECA LONGIPENNIS, Loew. 1858.

A species of great size, described from the Cape, and captured several times in South Africa.

One ♀ example from the Cape; also identified as such by Lichtwardt (1920).

PROSOECA ROBUSTA, sp. nov.

A stout species of large size, closely allied to longipennis, but distinct owing to the shorter proboscis, the unicolorous dark body and the whitish hyaline wings.

Type ♂, a single, rather old example from Grahamstown.

♂. Length of body 20 mm.; of a wing 21 mm.; of the proboscis 25 mm.; of the wing spread 52 mm.; breadth of abdomen at the second segment 11 mm.

Head entirely black, dark grey-dusted, only the middle of the face being reddish-brown. Eyes rather contiguous, the frons at the narrowest point being a little narrower than the distance between the two basal ocelli, but at root of antennae it is more than three times as broad; hairs of ocellar tubercle blackish, while on frons they are dense, yellowish whitish on the sides on the basal half, and erect on the whole apical half. The face is separated from the frons by a narrow furrow; it is convex and bare in the middle, prominent in profile, clothed with dense, pale yellowish hairs on the sides; beard dense and long, soft, of a pale yellowish colour; occipital border devoid of black hairs. First antennal joint longer than the globular second, both dark reddish in colour, infuscated above, with pale yellowish hairs, those of the under side being more rigid and longer; third joint more lightly reddish, of conical shape, about as long as the two first joints together; style blackish, a little longer than the whole antenna, with the two basal joints equally long, the third yellowish at end and longer than the other two together. Palpi reddish, with long pale yellowish hairs below;

proboscis not very thin, black above, reddish below. Thorax very broad, subquadrate, entirely black, opaque, dark grey-dusted, without any pattern at all; on the back it is clothed with an erect, equal, greyish pubescence with scattered and longer black hairs intermingled; on the sides there is a stripe of dense yellowish hairs; the pleurae are clothed with pale yellowish hairs. Scutellum broad and short, with a very prominent hem at the hind border, coloured and clothed like the thorax. Metapleural tuft long and dense, yellowish, halteres reddish-yellow. Abdomen broad and flat, as long as the thorax but a little broader; it is coloured like the thorax, the last segments only being narrowly reddish towards the sides; it is clothed above with short, black hairs, and has longer pale-yellowish hairs at the base and at the hind border of the segments; the hairs of the sides are denser and entirely yellowish, without any dark ones. Venter grey-dusted, whitish haired, with the apical segments more broadly reddish. Legs stout and rather bare; the long hairs of the femora are whitish, while the short and dense pubescence of the tibiae is yellowish; the four anterior femora are black with narrow reddish tip, the posterior ones are of a reddish colour with a blackish stripe below; tibiae and tarsi entirely reddish-yellow; claws of great size, red with black apical half; pulvilli and empodium dirty whitish; coxae black. Wings whitish hyaline, slightly yellowish at base and along the fore border; costa reddish, the other veins pale yellowish, more reddish at end; all the apical veins are strongly upturned at end; the stalk of the cubital fork is shorter than the portion of the diagonal vein below it; first posterior cell not narrowed at end, but distinctly narrower than the others; the sessile fourth posterior cell has a rather broad, not punctiform, contact with the second basal cell; anal cell much narrowed at end. Alulae broad and short, less than twice as long as broad at end. The extreme base of the wing is reddish brown, with a white tuft.

PROSOECA MAJOR, sp. nov.

Closely allied to the preceding species of which it may possibly be the female but distinct owing to the much stouter and shorter proboscis, and the darker pubescence of the thorax.

Type ♀, Gt. Winterhoek, Tulbagh, Cape. 5000 ft., April 1916 (R. M. LIGHTFOOT). Willowmore, Cape (H. Brauns).

♀. Length of body 20 mm.; of a wing 22 mm.; of proboscis 16 mm.; of the wing spread 54 mm.; breadth of the abdomen 11 mm.

Head as in the preceding, but with less prominent and shining

black face; the frons is reddish-brown on the anterior convexity; the hairs of the ocellar tubercle are of a deeper black colour. The frons is only a little broader than in the preceding species. The antennae have the third joint black on the apical half; the style is entirely black, with the first joint shorter than the second, and with the last joint more than twice as long as the first two joints together. Beard of a gold yellow colour, like the hairs of the underside of the palpi; proboscis black and very stout. Thorax as in the preceding species, but on the back it is clothed with a dense, erect pubescence of a deep black colour; there is no distinct lateral stripe, the black hairs being abundant even on the sides, as they are dominant on the pleurae also, only the metapleural tuft being gold yellow, Scutellum with long black hairs; halteres yellowish, with blackish knob. Abdomen as in the preceding species, but entirely black even at end and on the venter; the pubescence at the middle of the segments is deep black, but at the hind border of each segment there are dense hairs of a gold-yellow colour, forming transverse bands; terminal lamellae of the ovipositor black and black-haired. Legs as in the preceding species, but with tibiae and tarsi darker reddish or reddish-brown; hind femora darker: claws black, with a narrowly red base. Wings more greyish-hyaline, with the base and the fore half darker yellowish; venation exactly the same as in the preceding species.

*PROSOECA WILLOWMORENSIS*, Lichtwardt 1910.

Originally described from 2 males in the Museum at Budapest, and not found subsequently; typical locality Willowmore. Cape Colony, November 1904 (Kobrow).

*PROSOECA FLAVIPENNIS*, Lichtwardt 1910.

Described from a single male specimen in the British Museum, without a precise locality.

*PROSOECA LATA*, Lichtwardt 1910.

This species was known only by the type in the British Museum, from Natal, Port Shepstone, May 1897 (G. A. K. Marshall). Cape? Kookfontein (J. V. Goer).

One ♀ example from Natal, identified as such by Lichtwardt.

*PROSOECA BECKERI*, Lichtw. 1920.

Montagu Pass (N. Brauns); Saldanha Bay (R. N. Lightfoot); Cape Town "Table mountain" November 1914 (K. H. Barnard); Cogman's



Kloof, Montagu Distr. October 1922 (R. F. Lawrence) Cape. Woodbush Ville, Transvaal, April. C. J. Swierstra). A robust species of larger size, with a thick black proboscis as long as the thorax and showing broad terminal flaps. Upper side of body blackish-grey, with darker stripes on thorax and a row of dark spots along the middle line of the abdomen. Underside of body white clothed with long white hairs. In the present specimen the legs are not entirely black, the underside of the femora and of the tibiae being dark red. The hitherto undescribed female is very like the male, but distinct by the frons being a little broader, and the wings more narrowly infuscated, the infuscation not extending beyond the second longitudinal vein.

PROSOECA IGNITA, n. sp. ♂.

A very distinct and robust species near *beckeri*, at once distinguishable by the bright fulvous hairs of the pleurae and of the chin and breast. Woodbush Ville, April, (C. J. Swierstra) New Agatha, Transvaal, March.

♂ Length of body 16–18 mm.; breadth of abdomen 9–10 mm.; length of wing 22–28 mm.; wing expanse 54–60 mm.; length of proboscis 9–10 mm.

Head black, dark reddish and white dusted on the frons, shining reddish on the face. The hairs of the vertex and of the ocellar plate are black; frons bare; face with a few dark hairs on the sides; occiput grey with pale yellowish hairs; mentum with long and dense bright fulvous hairs. Antennae and arista black, the first antennal joint dark reddish, the second with long black hairs. Palpi black or very dark reddish; proboscis black, with dark reddish base; it is thick and only a little longer than the breast. Thorax and scutellum opaque, black, dark greydusted, with black erect hairs; pleurae and breast with dense tufts of bright fulvous hairs; mesopleurae with black hairs in the middle, but above there is a stripe of fulvous hairs along the notopleural line; metapleural tufts very long, bright fulvous, visible from above. Halteres blackish. Abdomen broad, dark reddish, the segments with blackish hind border; it is clothed with black erect hairs, denser near the base and along the sides; outer border light reddish, clothed with bright fulvous omentum at the sides. Legs stout, black, black haired, the femora dark reddish below. Wings greyish hyaline, infuscated along the fore border as far as the first basal cell; veins reddish brown, upturned at end; basal tuft white.

## PROSOECA WESTERMANNI, Wied. 1821.

A well-known species. Montagu, 2000 ft., 1919 (R. W. Tucker). Seven Weeks Poort, (E. P. Phillips) Cape Colony; Howick Natal. (J. Cregoe).

In the present specimen the abdomen is almost entirely black and very shiny, being a little brownish only towards the middle and being moreover quite unspotted; the elegant pattern on the back of the mesonotum is well marked. The wings are variegated in a characteristic manner, as described by Wiedemann and by Lichtwardt.

Wiedemann in his original description has already noticed that there are specimens with nearly entirely black abdomen.

## PROSOECA MACULARIS, Wiedemann 1828.

Originally described from the Cape, and not recorded subsequently, being even overlooked in Lichtwardt's Monograph of 1910.

## PROSOECA ZULUENSIS, Lichtwardt 1920.

A dark species of middle size, distinct by the blackish, but not sharply defined, fore border of the wings. Specimens from M'fongosi, Zululand. May 1917 (W. E. Jones); Transvaal (Woodbush Ville); Leydenburg, Barberton. Originally described from the Transvaal. (The male only being known, some additional descriptive notes are given here.)

Frons of the female only a little broader than that of the male, nearly bare in both sexes. Second antennal joint with long black cilia above and below; third joint conical, about as long as the two first joints together; style with the two basal joints of equal length and the terminal joint twice as long as the two other together. Face with scarce hairs on the sides; palpi with white hairs below; beard white; proboscis thick, red above, black at end and below. Scutellum like the back of the thorax. Halteres with blackish knob. Venter reddish; terminal lamellae of the ovipositor black and black-haired. Tibiae and tarsi darker than the femora, the tarsi being almost blackish; claws black, with red base; pulvilli and empodium dirty brownish. Stalk of cubital fork proportionally long, being longer than the portion of the diagonal vein below it; first posterior cell not narrowed at end; fourth posterior cell sessile at base, but there not punctiform; anal cell narrowed; alulae narrow, about three times as long as broad at end. Extreme base of wing black, with white tuft. Veins mainly black.

PROSOECA CAFFRARIA, Lichtwardt 1910.

The true *caffraria* has not been seen by me. It is described as coming from the Transvaal. Recorded also from Barberton, New Agatha, Lemana, Woodbush Ville.

(*P. zuluensis* is a close ally of, if not identical with *caffraria*, Editor).

PROSOECA UMBROSA, Lichtwardt 1910.

Closely allied to the preceding species, but distinct by the more lightly coloured body and wings.

Originally described from Natal, East London, Cape, (E. Borchers) Howick, (Cregose) Durban, Karkloof, Natal, May 1915 (H. W. Bell-Marley).

Frons and face entirely reddish, like the antennae and the legs, which have not infuscated tarsi; the ciliae of the second antennal joint are yellowish. Scutellum reddish brown. Abdomen distinctly reddish above on the sides of the segments. Wing-veins entirely reddish-yellow; wing-base reddish-brown; base of fourth posterior cell punctiform.

PROSOECA ATRA, Macquart 1846.

Originally described from the Cape as a *Hermoneura* and placed in the present genus by Lichtwardt in 1910; it seems to be closely allied to the species described here for the first time under the name of *connexa*. I have examined the example named by Lichtwardt.

PROSOECA LICHTWARDTI, n. sp.

Closely allied to *handlirschi* Lichtw., but at once distinguished by the entirely red legs.

Type ♀, a single specimen from Paarl, Cape. October 1888 (R. M. Lightfoot).

This is the same specimen recorded by Lichtwardt without a name (1920, p. 100, No. 127), as being intermediate between *handlirschi* and *westermanni*.

It is now described as new, and named in honour of the Monographer of the Nemestrinidae, whose studies have greatly contributed to the progress of our knowledge of these interesting flies.

♀. Length of body 12 mm.; of wing 15 mm.; of wing spread 36 mm. Frons black, grey-dusted, a little narrowed towards the middle; it is clothed with long dark erect hairs on the ocellar tubercle, and with more short but dense and bent forwards, whitish ones on the frontal half. Occiput grey-dusted, with thin whitish



hairs at border. Face convex, densely clothed with whitish hairs, like those of the anterior part of the frons; beard whitish. Antennae entirely black, the second basal joint grey-dusted and clothed with long pale yellowish hairs; third joint elongate, conical, as long as the two first joints together; arista deep black as long as the whole antenna, with the two basal joints of equal length. Palpi reddish, with long yellow hairs; proboscis black, short and stout, as long as the vertical diameter of the head. Thorax entirely clothed with pale yellowish hairs, which are short on back and longer on the pleurae; on the back it is black, with two narrow but complete whitish longitudinal stripes in the middle; on the sides, in contact with the notopleural bare line, there is a broader whitish stripe, on which are several black hairs. Pleurae densely grey-dusted. Scutellum black, grey-dusted, with long yellow hairs at hind border. Squamulae and halteres blackish. Abdomen shining black, the hind border of each segment with an opaque dark grey transverse band, which is broader in the middle, chiefly on the last segments, moreover there is in the middle of each segment a triangular opaque spot, with the base at hind border; the hairs are black on the back of the tergites, yellowish on the side and on a transverse band a base; venter densely grey-dusted, with pale hairs. Legs entirely reddish with very short reddish pubescence. Wings greyish-hyaline, a little infuscated along the fore border and with the first basal cell; vein reddish-yellow, those of apex curved up at end; tuft at root white. Stalk of cubital fork rather long; base of fourth posterior cell not punctiform; anal cell narrowed at end; alulae rather broad.

PROSOECA CIRCUMDATA, Lichtwardt 1910.

This species is at once distinguished from the two preceding ones by its hairy frons and its moderately shining abdomen.

Originally described from Natal. Durban, Natal, February 1914 (W. Haygarth); Transvaal, Woodbush (Leigh). Frons clothed with long, erect, whitish hairs; ocellar tubercle black and black-haired. Basal joints of the antennae with whitish ciliae; the two basal joints of the style are short, measuring together a third only of the length of the terminal joint. Proboscis black above. Thorax with greyish pubescence on the back; scutellum with gold-yellow hairs. Halteres with a dark knob. Hairs of abdomen rather long and entirely yellowish. Stalk of the cubital fork long; base of the fourth posterior cell not punctiform; alulae narrow; veins reddish brown, blackened at end; basal tuft white.

PROSOECA HANDLIRSCHI, Lichtwardt 1910.

A robust species with a very short and stout proboscis, eminently characterised by the shining black, grey-banded abdomen, and by the entirely black legs. Originally described from Robinson's Pass; there is a female specimen, likewise from a mountainous district, Gt. Winterhoek, 5000 ft., Tulbagh, April 1916 (R. M. Lightfoot); Hottentots Holland Mountains, 4000 ft. (K. H. Barnard); Caledon, Cape (L. Péringuey).

Proboscis entirely black, even above at base; second joint of the style longer than the first, both measuring together more than one half of the rest. Scutellum with gold-yellow hairs like the metapleural tufts. Claws black, with a red base; pulvilli and empodium yellowish. Stalk of the cubital fork long; base of the fourth posterior cell not punctiform.

PROSOECA QUINQUE, Lichtwardt 1920.

I have seen the type of Lichtwardt; the species seems to be not easily distinguishable from *variegata* Loew.

PROSOECA VARIEGATA, Loew 1858.

Described from the Cape and recorded from South Africa by Lichtwardt.

PROSOECA ORNATA, Lichtwardt 1910.

Originally described from Simon's Town, Cape. I refer with doubt to it a not well preserved male example from Grahamstown Cape, in my collection. This specimen shows the venation characters of the species, but has a less developed general pattern of the body.

PROSOECA VARIABILIS, Loew 1858.

Distinct by the non spotted wings, which have moreover quite straight veins at apex.

Originally described from Caffraria; is possibly the female of *fusca*, Loew.

There is a female specimen from Durban, Natal, February 1914 (W. Haygarth), answering very well to Loew's description. The stalk of the cubital fork is long; the fourth posterior cell is punctiform at base; the alula is very narrow; the basal tuft is white.

PROSOECA FUSCA, Loew, 1860.

Known from various localities in Natal, and described originally from "Caffraria". A doubtful miniature female example from Cape Town, is referred to this species.

## PROSOECA ACCINCTA, Wiedemann 1830.

Originally described from the Cape, and recorded subsequently from Natal. I have seen one male from Barberton, Transvaal, determined by Lichtwardt.

## PROSOECA CONNEXA, sp. nov.

A black and black-haired species with spotted wings, easily distinguishable from all the others on account of the black basal tuft of the wings, and of the united branches of the fourth longitudinal vein.

Type ♂, a single specimen from Durban, Natal, February 1914 (W. HAYGARTH). Occurs also in the Transvaal. Woodbush.

It is very near *accincta*, being possibly only a variety of it; but it is much blacker and black-haired, thus answering probably to *atra*.

♂. Length of body 12 mm.; of proboscis 10 mm.; of a wing 13 mm.; of wing-spread 32 mm. Frons black, grey-dusted, rather narrowed before the front ocellus; it is clothed with long, dense and erect black hairs, those of the anterior part being developed like those of the ocellar tubercle. Occiput hollowed, black, grey-dusted below, with short black hairs at the border. Face convex, reddish, with long black hairs on the sides; beard yellowish. The two basal joints of the antennae are reddish-yellow, the first being longer than the second, which has very long black cilia above and below; third joint deep black, narrowly conical, as long as the first two joints together; style black, a little longer than the whole antenna, with the basal two joints of equal length. Palpi reddish, with black tip and with black cilia at end; proboscis a little shorter than the body, red above at base, black on the apical half and below. Thorax and scutellum of a deep, velvety black colour and opaque; they are clothed with long and dense black hairs; the pleurae are grey-dusted and black-haired, even the subalar and metapleural tufts being black. Halteres black. The abdomen in the middle is coloured like the thorax, while on the sides it is rather broadly reddish brown; the hairs are black, pale yellowish on the sides of the first segment, but not forming the yellowish band of *accincta*. Venter more lightly reddish, grey-dusted, with yellowish pubescence; genitalia reddish brown behind and below, dark-haired. Legs entirely reddish on the femora, more pale yellowish on the tibiae and on the tarsi, the last tarsal joint only being darkened; the long hairs of the femora are black, while the short pubescence of the tibiae is yellowish; claws black, with red base; pulvilli and empodium dirty yellowish. Wings infuscated on the fore half, greyish hyaline on the hind one, but



the limit is not sharply defined; there are besides some diffuse fuscous spots at the end of the second basal cell and at the base of the fourth posterior cell (round its punctiform base), at the end of the first basal cell and at the base of the cubital fork. The veins are black, only the axillary one and the first being dark reddish; the extreme base is black, with a black tuft. All the longitudinal veins are quite straight at end; the stalk of the cubital fork is long; first posterior cell irregularly shaped; second posterior cell divided into three cells by two supernumerary cross veins placed near its middle and forming thus a small trapezoidal cell between them; base of the fourth posterior cell punctiform; anal cell narrowed at end. Alula very narrow.

Possibly an aberrant example of *atra* Macq.

#### MEGISTORRHYNCHUS, Macquart, 1840.

In the present genus are comprised the more highly specialised species of the South African *Nemestrinidae*, with a remarkable network on the apical half of the wings, and with an often exceedingly long proboscis. The two known species may be distinguished as follows:

- (2) 1. Proboscis as long as the body or nearly so; lower branch of the anal vein not appendiculated in the middle, or with a very short appendage outwardly . . . . . *brevirostris*, Wied.
- (1) 2. Proboscis many times longer than the body; lower anal branch with a long appendage in the middle, placed inwardly . . . *longirostris*, Wied.

#### MEGISTORRHYNCHUS BREVIROSTRIS, Wiedemann, 1821.

A very interesting fly closely allied to the following one, but distinct owing to the above quoted characters. Originally described from the Cape. There is a male specimen from Gt. Winterhoek, Tulbagh, Cape, 4500 ft., November 1911. (R. M. Lightfoot).

The grey spots of the abdomen are isolated as in *longirostris*. The stalk of the cubital fork is short; the fourth posterior cell is broadly sessile at base; the anal cell is nearly closed at the wing border; the alula is rather broad, being a little more than twice longer than broad at end; the basal tuft at root of wing is white.

#### MEGISTORRHYNCHUS LONGIROSTRIS, Wiedemann, 1819.

One of the most typical South-African insects; frequently recorded from the Cape. Montagu, Cape (F. W. Purcell); another example, without locality.

---

# INDEX.

		PAGE
A.		
<i>accincta</i>	(Prosoeca)	Wied. . . 188
<i>africana</i>	(Atriadops)	Wandlk. . 168
<i>atra</i>	(Prosoeca)	Macq. . . 185
<i>Atriadops</i>		Wandlk. . 168
B.		
<i>beckeri</i>	(Prosoeca)	Lichtw. . 182
<i>brevirostris</i>	(Megistorrhynchus)	Wied. 189
C.		
<i>cafraria</i>	(Prosoeca)	Lichtw. . 185
<i>capensis</i>	(Nycterimya)	Bez. . . 168
<i>circumdata</i>	(Prosoeca)	Lichtw. . 186
<i>Colax</i>		Wiedem. . 168
<i>connexa</i>	(Prosoeca)	Bez. . . 188
<i>costatus</i>	(Symmictus)	Loew. . . 170
F.		
<i>fusca</i>	(Prosoeca)	Loew. . . 187
<i>flavipennis</i>	(Prosoeca)	Lichtw. . 182
G.		
<i>ganglbaueri</i>	(Prosoeca)	Lichtw. . 178
<i>gracile</i>	(Stenobasipteron)	Lichtw. 171
H.		
<i>handlirschi</i>	(Prosoeca)	Lichtw. . 187
I.		
<i>ignita</i>	(Prosoeca)	Bez. . . 183
L.		
<i>lata</i>	(Prosoeca)	Lichtw. . 182
<i>lichtwardti</i>	(Prosoeca)	Bez. . . 185
<i>longipennis</i>	(Prosoeca)	Loew. . . 180
<i>longirostris</i>	(Prosoeca)	Macq. . . 178
<i>longirostris</i>	(Megistorrhynchus)	Wied. . . 189
M.		
<i>macularis</i>	(Prosoeca)	Wied. . . 184
<i>major</i>	(Prosoeca)	Bez. . . 181

		PAGE
<i>Megistorrhynchus</i>		. . . 189
<i>minimum</i>	(Stenobasipteron)	Bez. . 171
N.		
<i>nitidula</i>	(Prosoeca)	Bez. . . 178
<i>Nycterimya</i>		Lichtw. . 168
O.		
<i>ornata</i>	(Prosoeca)	Lichtw. . 187
P.		
<i>péringueyi</i>	(Prosoeca)	Lichtw. . 175
<i>pictipennis</i>	(Prosoeca)	Bez. . .
<i>Prosoeca</i>		Schin. . . 172
Q.		
<i>quinque</i>	(Prosoeca)	Lichtw. . 187
R.		
<i>robusta</i>	(Prosoeca)	Bez. . . 180
<i>rubicunda</i>	(Prosoeca)	Bez. . . 177
S.		
<i>Stenobasipteron</i>		Lichtw. . 170
<i>Symmictus</i>		Loew. . . 170
U.		
<i>umbrosa</i>	(Prosoeca)	Lichtw. . 185
V.		
<i>variabilis</i>	(Prosoeca)	Loew. . . 187
<i>variegata</i>	(Prosoeca)	Loew. . . 187
<i>vespertilio</i>	(Atriadops)	Loew. . . 168
W.		
<i>westermanni</i>	(Prosoeca)	Wied. . . 184
<i>wiedemanni</i>	(Stenobasipteron)	Lichtw. 171
<i>willowmorensis</i>	(Prosoeca)	Lichtw. 182
Z.		
<i>zuluensis</i>	(Prosoeca)	Lichtw. . 184